

# **East Anglia ONE North Offshore Windfarm**

## **Appendix 29.4**

### **Cumulative Impact Assessment**

Preliminary Environmental Information

Volume 3

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#### Revision Summary

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## Glossary of Acronyms

<b>CIA</b>	Cumulative Impact Assessment
EIA	Environmental Impact Assessment
ETG	Expert Topic Group
LCT	Landscape Character Types
ZTV	Zone of Theoretical Visibility



## Glossary of Terminology

Applicant	East Anglia ONE North Limited.
Construction consolidation sites	Compounds which will contain laydown, storage and work areas for onshore construction works. The HDD construction compound will also be referred to as a construction consolidation site.
Development area	The area comprising the proposed onshore development area and the offshore development area
East Anglia ONE North project	The proposed project consisting of up to 67 wind turbines, up to four offshore electrical platforms, up to one offshore construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure.
European site	Sites designated for nature conservation under the Habitats Directive and Birds Directive, as defined in regulation 8 of the Conservation of Habitats and Species Regulations 2017 and regulation 18 of the Conservation of Offshore Marine Habitats and Species Regulations 2017. These include candidate Special Areas of Conservation, Sites of Community Importance, Special Areas of Conservation and Special Protection Areas.
Evidence Plan Process	A voluntary consultation process with specialist stakeholders to agree the approach to the EIA and the information required to support HRA.
Horizontal directional drilling (HDD)	A method of cable installation where the cable is drilled beneath a feature without the need for trenching.
Jointing bay	Underground structures constructed at regular intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into the buried ducts.
Landfall	The area (from Mean Low Water Springs) where the offshore export cables would make contact with land, and connect to the onshore cables.
Link boxes	Underground chambers or above ground cabinets next to the cable trench housing electrical earthing links.
Mitigation areas	Areas captured within the Development Area specifically for mitigating expected or anticipated impacts.
National Grid infrastructure	A National Grid substation, connection to the existing electricity pylons and National Grid overhead line realignment works which will be consented as part of the proposed East Anglia ONE North project Development Consent Order but will be National Grid owned assets.
National Grid overhead line realignment works	Works required to upgrade the existing electricity pylons and overhead lines to transport electricity from the National Grid substation to the national electricity grid
National Grid overhead line realignment works area	The proposed area for National Grid overhead line realignment works.



National Grid substation	The substation (including all of the electrical equipment within it) necessary to connect the electricity generated by the proposed East Anglia ONE North project to the national electricity grid which will be owned by National Grid but is being consented as part of the proposed East Anglia ONE North project Development Consent Order.
National Grid substation location	The proposed location of the National Grid substation.
Natura 2000 site	A site forming part of the network of sites made up of Special Areas of Conservation and Special Protection Areas designated respectively under the Habitats Directive and Birds Directive.
Onshore cable corridor	The corridor within which the onshore cable route will be located.
Onshore cable route	This is the construction swathe within the onshore cable corridor which would contain onshore cables as well as temporary ground required for construction which includes cable trenches, haul road and spoil storage areas.
Onshore cables	The cables which would bring electricity from landfall to the onshore substation. The onshore cable is comprised of up to six power cables and two fibre optic cables.
Proposed onshore development area	The area in which the landfall, onshore cable corridor, onshore substation, mitigation areas, temporary construction facilities (such as access roads and construction consolidation sites), and the National Grid Infrastructure will be located.
Onshore infrastructure	The combined name for all of the onshore infrastructure associated with the proposed East Anglia ONE North project from landfall to the connection to the national electricity grid.
Onshore substation	The East Anglia ONE North substation and all of the electrical equipment, both within and connecting to the National Grid infrastructure.
Onshore substation location	The proposed location of the onshore substation for the proposed East Anglia ONE North project.
SuDS – Sustainable Drainage System	Approaches to manage surface water that take account of water quantity (flooding), water quality (pollution) biodiversity (wildlife and plants) and amenity
Transition bay	Underground structures at the landfall that house the joints between the offshore export cables and the onshore cables.



## 29.4 Cumulative Assessment

### 29.1 Introduction

1. The proposed East Anglia TWO project is also in the pre-application stage. The proposed East Anglia TWO project will be the subject of a separate DCO application but is working to the same programme of submission as the proposed East Anglia ONE North project. The two projects will share the same landfall and onshore cable route and the onshore substations will be co-located.

#### 29.1.1 Matters scoped out of the EIA

2. The cumulative Landscape and Visual Impact Assessment (LVIA) assesses the potential cumulative effects relating to the onshore substation and National Grid substation, landfall and onshore cable route.
3. The Planning Inspectorate has provided comments in their Scoping Opinion on matters that can be scoped out of the Environmental Impact Assessment (EIA) and has agreed that the following landscape and visual matters can be scoped out of the assessment:
  - Landscape and visual impacts of the landfall during operation; and
  - Landscape and visual impact of the onshore cable route during operation (with the exception of the removal of woodland at the Aldeburgh Road crossing (Raidsend) which is assessed as an operational effect).
4. In both cases, following remediation works, the underground infrastructure at the landfall and within the onshore cable route is unlikely to result in significant effects and these matters can be scoped out of the assessment, as agreed with the Planning Inspectorate. These matters are not assessed any further in the technical assessments in this **Appendix 29.4** and **Chapter 29 Seascape, Landscape and Visual Impact assessment**.

#### 29.1.2 Cumulative Effect Assessment Scenarios

##### 29.1.2.1 Introduction

5. The proposed East Anglia ONE North project Cumulative Impact Assessment (CIA) therefore initially considers the cumulative effects with only the proposed East Anglia TWO project.
6. The CIA considers the proposed East Anglia ONE North project and the proposed East Anglia TWO project under two construction scenarios:



- Scenario 1 - the proposed East Anglia ONE North project and East Anglia TWO project are built simultaneously (i.e. constructed at the same time); and
  - Scenario 2 - the proposed East Anglia ONE North project and East Anglia TWO project are built sequentially (i.e. the East Anglia ONE North project is built entirely and land is re-instated, then East Anglia TWO project is constructed).
7. The worst case scenario for each impact is then carried through to the wider CIA which considers other developments which are in close proximity to the proposed East Anglia ONE North project.
8. The operational phase cumulative landscape and visual effects will be the same irrespective of the construction scenario and assess the impact of the operation of the proposed East Anglia ONE North substation, proposed East Anglia TWO substation and National Grid substation. For a more detailed description of the assessment scenarios please refer to **Chapter 5 EIA Methodology**.
9. In the LVIA, a further cumulative assessment scenario is assessed – the effects of the construction and operation of the East Anglia ONE North onshore infrastructure with the East Anglia TWO onshore infrastructure and Sizewell C New Nuclear Power Station, EDF Energy's proposals for a new nuclear power station.

#### 29.1.2.2 Worst-case

##### 29.1.2.2.1 Scenario 1

10. **Table A29.1** presents the worst case assumptions for construction of both the proposed East Anglia ONE North and proposed East Anglia TWO projects simultaneously.

**Table A29.1 Worst Case for Scenario 1**

Impact	Parameter	Notes
<b>Construction</b>		
Impacts related to the landfall	<ul style="list-style-type: none"> <li>The effect on the landscape element of agricultural land owing to the Horizontal Directional Drilling (HDD) temporary works area (13,300m<sup>2</sup>), four transition bay excavation footprints (3,108m<sup>2</sup>) and the temporary roads;</li> <li>The effect on landscape character and visual amenity owing to the presence of the temporary, surfaced and fenced HDD temporary works area, associated security and task lighting and the</li> </ul>	<p>The potential landscape and visual effects of the landfall during the construction phase would relate principally to the features of the construction process.</p> <p>Landfall to be achieved via HDD. No beach access required.</p> <p>Further detail regarding construction footprints are</p>



Impact	Parameter	Notes
	<p>presence of the HDD drilling rig, ducting materials and welfare facilities;</p> <ul style="list-style-type: none"> <li>The effect on landscape character and visual amenity owing to the activity associated with the excavation and construction of the two transition bays, HDD drilling, pulling through of cables and construction of temporary roads; and</li> <li>The effect on the visual amenity of walkers on the coastal path owing to the onshore construction works.</li> </ul>	provided in <b>Chapter 6 Project Description</b> .
Impacts related to the onshore cable corridor	<ul style="list-style-type: none"> <li>The effect on the landscape element and landscape character and visual amenity of agricultural land owing to the topsoil strip of the approximately 64m wide onshore cable route;</li> <li>The effect on the landscape element of agricultural land owing to the presence of the five construction consolidation sites (CCS) (204,750m<sup>2</sup> in total), the jointing bays (41,040m<sup>2</sup> in total) and temporary roads;</li> <li>The effect on the landscape element of hedgerows and tree removal owing to the excavation for the 32.1m wide onshore cable route and felling of mature woodland at Raidsend at Aldeburgh Road crossing; and</li> <li>The effect on landscape character and landscape character and visual amenity owing to the presence and activity associated with the temporary, surfaced and fenced CCS, and HDD entrance and exit compounds, and their content of plant, materials and welfare facilities, and the temporary roads.</li> </ul>	<p>Onshore cable route construction footprint may be located anywhere within the proposed onshore development area.</p> <p>The location strategy for access routes, CCS and jointing bays will be to site them near to field boundaries or roads as far as practically possible.</p> <p>Note that 9 access points have been proposed for the haul road, this will be confirmed post-PEIR.</p> <p>Further detail regarding construction footprints are provided in <b>Chapter 6 Project Description</b>.</p>
Impacts related to the onshore substation(s)	<ul style="list-style-type: none"> <li>The effect of the loss of agricultural land owing to the installation of the onshore substation CCS (51,300m<sup>2</sup>) and onshore substation permanent footprint (36,100m<sup>2</sup>);</li> <li>The effect on landscape character and visual amenity owing to the presence of the surfaced and fenced onshore substation CCS, and the content of plant, materials and welfare facilities;</li> <li>The effect on landscape character and visual amenity owing to the presence of</li> </ul>	<p>The potential landscape and visual effects of the onshore substation during the construction phase will relate principally to the features of the construction process.</p> <p>Further detail regarding construction footprints are provided in <b>Chapter 6 Project Description</b>.</p>



Impact	Parameter	Notes
	<p>the emerging onshore substation(s) with GIS building height up to 15m, electrical infrastructure height up to 18m (such as shunt reactors, transformers, harmonic filters etc), over a 190m x 190m footprint for each onshore substation;</p> <ul style="list-style-type: none"> <li>The effect on landscape character and visual amenity owing to the activity associated with the installation of the onshore substation CCS, onshore substation permanent footprint and access road of the B1122 Saxmundham Road, vehicles, machinery and cranes;</li> <li>The construction of the onshore infrastructure will result in some changes in ground profiles within and immediately around the onshore substation and the stockpiling of subsoil/topsoil needed during the construction period. The construction of a Sustainable Drainage System (SuDS) pond will be required to provide a sustainable drainage solution for the onshore substation(s); and</li> <li>Task and vehicle lighting may be used in the hours of darkness during approved working hours.</li> </ul>	
Impacts related to the National Grid Infrastructure	<ul style="list-style-type: none"> <li>The effect on the loss of agricultural land owing to the installation of the National Grid substation CCS (43,750m<sup>2</sup>) temporary construction compound and National Grid substation permanent footprint (45,500m<sup>2</sup>);</li> <li>The effect of the loss of existing hedgerow within the National Grid substation permanent footprint;</li> <li>The effect on landscape character and visual amenity owing to the presence and activity of the surfaced and fenced National Grid substation CCS, with its content of plant, materials and welfare facilities;</li> <li>The effect on landscape character and visual amenity owing to the presence of the emerging National Grid substation with Air Insulated Substation (AIS) electrical infrastructure up to 13m in height;</li> </ul>	<p>The option of a National Grid substation with GIS electrical infrastructure up to 16m in height is deemed not the worst case due to the reduced footprint (120m x 140m) compared to the AIS electrical infrastructure. For comparison, a set of visualisations from agreed Viewpoints with the National Grid substation with GIS electrical infrastructure have been produced in <b>Figure 29.28</b> to <b>Figure 29.40</b>. These are for information purposes only to enable comparison of National Grid substation options.</p> <p>Further detail regarding construction footprints are provided in <b>Chapter 6 Project Description</b>.</p>



Impact	Parameter	Notes
	<ul style="list-style-type: none"> <li>The effect on landscape character and visual amenity owing to the activity associated with the installation of the National Grid CCS, National Grid substation permanent footprint and, shared access road and overhead line realignment works;</li> <li>The construction of the onshore infrastructure will result in some changes in ground profiles within and immediately around the National Grid substation permanent footprint and the stockpiling of subsoil/topsoil needed during the construction period. The construction of a SuDS pond will be required to provide a sustainable drainage solution for the National Grid substation; and</li> <li>Task and vehicle lighting may be used in the hours of darkness during approved working hours.</li> </ul>	
<b>Operation</b>		
Impacts related to the onshore cable corridor	<ul style="list-style-type: none"> <li>Permanent loss of 0.9ha of mature woodland as a result of the onshore cable route at Aldeburgh Road (Raidsend), on land to the south of Aldringham Court.</li> </ul>	It should be noted that jointing bays will be underground – there will be no surface infrastructure.
Impacts related to the onshore substation(s)	<ul style="list-style-type: none"> <li>The effect on landscape character and visual amenity owing to the presence of the onshore substation(s) with buildings up to 15m in height and electrical infrastructure up to 18m and occupying a site of 190m x 190m (for each substation);</li> <li>The effect on landscape character and visual amenity owing to the presence of the new access road to the onshore substation(s) off the B1122 Saxmundham Road;</li> <li>The effect of the re-establishment of hedgerows around the perimeter of the onshore substation(s), and the re-instatement of hedgerows over the onshore cable route into the onshore substation(s); and</li> <li>The establishment of substantial areas of new woodland planting around the onshore substation(s), as described in section <b>Error! Reference source not f</b></li> </ul>	Note that the operational footprint is relevant to substation infrastructure and does not include the additional landscaping footprint (which will be agreed post-PEIR).



Impact	Parameter	Notes
	ound. and shown in the landscape mitigation plan ( <b>Figure 29.11</b> ).	
Impacts related to the National Grid Infrastructure	<ul style="list-style-type: none"> <li>The effect on landscape character and visual amenity owing to the presence of the National Grid substation (325m x 140m) with AIS electrical infrastructure up to 13m in height;</li> <li>The effect on landscape character and visual amenity owing to the presence of the new access road to the National Grid substation off the B1122 Saxmundham Road; and</li> <li>The establishment of substantial areas of new woodland planting around the onshore substation and National Grid substation, as described in <b>section Error! Reference source not found.</b> and shown in the landscape mitigation plan (<b>Figure 29.11</b>).</li> </ul>	Design for the required overhead line (OHL) realignment work (including cable sealing end CCSs and pylon realignment CCS) is currently on going. As more detail is made available, this will be fully assessed and included in the Environmental Statement (ES) and DCO application. However, indicative locations for cable sealing end CCSs and pylon realignment CCS are shown in <b>Figure 6.6 of Chapter 6 Project Description</b> .
<b>Decommissioning</b>		
<p>No decision has been made regarding the final decommissioning policy for the onshore infrastructure as it is recognised that industry best practice, rules and legislation change over time. However, the onshore substation will likely be removed and be reused or recycled. It is expected that the onshore cables will be removed and recycled, with the transition bays and cable ducts (where used) left <i>in situ</i>. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, for the purposes of a worst-case scenario, impacts no greater than those identified for the construction phase are expected for the decommissioning phase.</p>		

#### 29.1.2.2.2 Scenario 2

11. **Table A29.2** presents the worst case assumptions in the scenario where the proposed East Anglia ONE North project and proposed East Anglia ONE North project are built with a construction gap. It is intended that the construction of the proposed East Anglia TWO project will be progressed prior to commencing construction of the proposed East Anglia ONE North project.
12. Scenario 2 assumes that when permission is granted, the proposed East Anglia ONE North project will be constructed as soon as permission is granted. The proposed East Anglia TWO project will leave the largest possible gap (between the reinstatement of the proposed East Anglia ONE North project and start of construction for the proposed East Anglia TWO project) to begin construction within the consent period. Further detail regarding the likely construction gap is provided in **Chapter 5 EIA Methodology**.



**Table A29.2 Worst Case for Scenario 2**

Impact	Proposed East Anglia TWO Project Parameters	Proposed East Anglia ONE North Project Parameters (on the assumption that the proposed East Anglia TWO project is post-construction)	Notes
<b>Construction</b>			
Impacts related to the landfall	<ul style="list-style-type: none"> <li>The effect on the landscape element of agricultural land owing to the Horizontal Directional Drilling (HDD) temporary works area (7,000m<sup>2</sup>), two transition bay excavation footprints (1,554m<sup>2</sup>) and the temporary roads;</li> <li>The effect on landscape character and visual amenity owing to the presence of the temporary, surfaced and fenced HDD temporary works area, associated security and task lighting and the presence of the HDD drilling rig, ducting materials and welfare facilities;</li> <li>The effect on landscape character and visual amenity owing to the activity associated with the excavation and construction of the two transition bays, HDD drilling, pulling through of cables and construction of temporary roads; and</li> <li>The effect on the visual amenity of walkers on the coastal path owing to the onshore construction works.</li> </ul>	<ul style="list-style-type: none"> <li>The effect on the landscape element of agricultural land owing to the Horizontal Directional Drilling (HDD) temporary works area (7,000m<sup>2</sup>), two transition bay excavation footprints (1,554m<sup>2</sup>) and the temporary roads;</li> <li>The effect on landscape character and visual amenity owing to the presence of the temporary, surfaced and fenced HDD temporary works area, associated security and task lighting and the presence of the HDD drilling rig, ducting materials and welfare facilities;</li> <li>The effect on landscape character and visual amenity owing to the activity associated with the excavation and construction of the two transition bays, HDD drilling, pulling through of cables and construction of temporary roads; and</li> </ul> <p>The effect on the visual amenity of walkers on the coastal path owing to the onshore construction works.</p>	<p>The potential landscape and visual effects of the landfall during the construction phase would relate principally to the features of the construction process.</p> <p>Landfall to be achieved via HDD. No beach access required.</p> <p>Further detail regarding construction footprints are provided in <b>Chapter 6 Project Description</b>.</p>
Impacts related to the onshore cable corridor	<ul style="list-style-type: none"> <li>The effect on the landscape element and landscape character and visual amenity of agricultural land owing to the topsoil strip of the approximately 32m wide onshore cable route;</li> </ul>	<ul style="list-style-type: none"> <li>The effect on the landscape element and landscape character and visual amenity of agricultural land owing to the topsoil strip of the approximately 32m wide onshore cable route;</li> </ul>	<p>Onshore cable route construction footprint may be located anywhere within the proposed onshore development area.</p> <p>The location strategy for access routes, CCS and jointing bays</p>



Impact	Proposed East Anglia TWO Project Parameters	Proposed East Anglia ONE North Project Parameters (on the assumption that the proposed East Anglia TWO project is post-construction)	Notes
	<ul style="list-style-type: none"> <li>The effect on the landscape element of agricultural land owing to the presence of the five construction consolidation sites (CCS) (92,000m<sup>2</sup> in total), the jointing bays (20,520m<sup>2</sup> in total) and temporary roads;</li> <li>The effect on the landscape element of hedgerows and tree removal owing to the excavation for the 16.1m wide onshore cable route and felling of mature woodland at Raidsend at Aldeburgh Road crossing; and</li> <li>The effect on landscape character and landscape character and visual amenity owing to the presence and activity associated with the temporary, surfaced and fenced CCS, and HDD entrance and exit compounds, and their content of plant, materials and welfare facilities, and the temporary roads.</li> </ul>	<ul style="list-style-type: none"> <li>The effect on the landscape element of agricultural land owing to the presence of the five construction consolidation sites (CCS) (92,000m<sup>2</sup> in total), the jointing bays (20,520m<sup>2</sup> in total) and temporary roads;</li> <li>The effect of the loss of the edge of the woodland of Laurel Covert within the north-east corner of footprint of the onshore substation and areas of hedgerow and clusters of small trees that overlap with the construction compound and haul road;</li> <li>The effect on the landscape element of hedgerows and tree removal owing to the excavation for the 16.1m wide onshore cable route and felling of mature woodland at Raidsend at Aldeburgh Road crossing; and <ul style="list-style-type: none"> <li>The effect on landscape character and landscape character and visual amenity owing to the presence and activity associated with the temporary, surfaced and fenced CCS, and HDD entrance and exit compounds, and their content of plant, materials and welfare facilities, and the temporary roads.</li> </ul> </li> </ul>	<p>will be to site them near to field boundaries or roads as far as practically possible.</p> <p>Note that 9 access points have been proposed for the haul road, this will be confirmed post-PEIR.</p> <p>Further detail regarding construction footprints are provided in <b>Chapter 6 Project Description</b>.</p>
Impacts related to the onshore substation	<ul style="list-style-type: none"> <li>The effect of the loss of agricultural land owing to the installation of the onshore substation CCS (17,100m<sup>2</sup>) and onshore</li> </ul>	<ul style="list-style-type: none"> <li>The effect of the loss of agricultural land owing to the installation of the onshore substation CCS (17,100m<sup>2</sup>) and onshore</li> </ul>	The potential landscape and visual effects of the onshore substation during the construction phase



Impact	Proposed East Anglia TWO Project Parameters	Proposed East Anglia ONE North Project Parameters (on the assumption that the proposed East Anglia TWO project is post-construction)	Notes
	<p>substation permanent footprint (36,100m<sup>2</sup>);</p> <ul style="list-style-type: none"> <li>The effect on landscape character and visual amenity owing to the presence of the surfaced and fenced onshore substation CCS, and the content of plant, materials and welfare facilities;</li> <li>The effect on landscape character and visual amenity owing to the presence of the emerging onshore substation with GIS building height up to 15m, electrical infrastructure height up to 18m (such as shunt reactors, transformers, harmonic filters etc), over a 190m x 190m footprint;</li> <li>The effect on landscape character and visual amenity owing to the activity associated with the installation of the onshore substation CCS, onshore substation permanent footprint and access road of the B1122 Saxmundham Road, vehicles, machinery and cranes;</li> <li>The construction of the onshore infrastructure will result in some changes in ground profiles within and immediately around the onshore substation and the stockpiling of subsoil/topsoil needed during the construction period. The construction of a Sustainable Drainage System (SuDS) pond will be required to provide a sustainable drainage</li> </ul>	<p>substation permanent footprint (36,100m<sup>2</sup>);</p> <ul style="list-style-type: none"> <li>The effect on landscape character and visual amenity owing to the presence of the surfaced and fenced onshore substation CCS, and the content of plant, materials and welfare facilities;</li> <li>The effect on landscape character and visual amenity owing to the presence of the emerging onshore substation with GIS building height up to 15m, electrical infrastructure height up to 18m (such as shunt reactors, transformers, harmonic filters etc), over a 190m x 190m footprint;</li> <li>The effect on landscape character and visual amenity owing to the activity associated with the installation of the onshore substation CCS, onshore substation permanent footprint and access road of the B1122 Saxmundham Road, vehicles, machinery and cranes;</li> <li>The construction of the onshore infrastructure will result in some changes in ground profiles within and immediately around the onshore substation and the stockpiling of subsoil/topsoil needed during the construction period. The construction of a Sustainable Drainage System (SuDS) pond will be required to provide a sustainable drainage</li> </ul>	<p>will relate principally to the features of the construction process.</p> <p>Further detail regarding construction footprints are provided in <b>Chapter 6 Project Description</b>.</p>



Impact	Proposed East Anglia TWO Project Parameters	Proposed East Anglia ONE North Project Parameters (on the assumption that the proposed East Anglia TWO project is post-construction)	Notes
	<p>solution for the onshore substation; and</p> <ul style="list-style-type: none"> <li>Task and vehicle lighting may be used in the hours of darkness during approved working hours.</li> </ul>	<p>solution for the onshore substation; and</p> <p>Task and vehicle lighting may be used in the hours of darkness during approved working hours.</p>	
Impacts related to the National Grid Infrastructure	<ul style="list-style-type: none"> <li>The effect on the loss of agricultural land owing to the installation of the National Grid substation CCS (43,750m<sup>2</sup>) temporary construction compound and National Grid substation permanent footprint (45,500m<sup>2</sup>);</li> <li>The effect of the loss of existing hedgerow within the National Grid substation permanent footprint;</li> <li>The effect on landscape character and visual amenity owing to the presence and activity of the surfaced and fenced National Grid substation CCS, with its content of plant, materials and welfare facilities;</li> <li>The effect on landscape character and visual amenity owing to the presence of the emerging National Grid substation with Air Insulated Substation (AIS) electrical infrastructure up to 13m in height;</li> <li>The effect on landscape character and visual amenity owing to the activity associated with the installation of the National Grid CCS, National Grid substation permanent footprint and, shared access road and</li> </ul>	<ul style="list-style-type: none"> <li>The effect on the loss of agricultural land owing to the installation of the National Grid substation CCS (43,750m<sup>2</sup>) temporary construction compound and National Grid substation permanent footprint (45,500m<sup>2</sup>);</li> <li>The effect of the loss of existing hedgerow within the National Grid substation permanent footprint;</li> <li>The effect on landscape character and visual amenity owing to the presence and activity of the surfaced and fenced National Grid substation CCS, with its content of plant, materials and welfare facilities;</li> <li>The effect on landscape character and visual amenity owing to the presence of the emerging National Grid substation with Air Insulated Substation (AIS) electrical infrastructure up to 13m in height;</li> <li>The effect on landscape character and visual amenity owing to the activity associated with the installation of the National Grid CCS, National Grid substation permanent footprint and, shared access road and</li> </ul>	<p>The option of a National Grid substation with GIS electrical infrastructure up to 16m in height is deemed not the worst case due to the reduced footprint (120m x 140m) compared to the AIS electrical infrastructure. For comparison, a set of visualisations from agreed Viewpoints with the National Grid substation with GIS electrical infrastructure have been produced in <b>Figure 29.28</b> to <b>Figure 29.40</b>. These are for information purposes only to enable comparison of National Grid substation options.</p> <p>Further detail regarding construction footprints are provided in <b>Chapter 6 Project Description</b>.</p>



Impact	Proposed East Anglia TWO Project Parameters	Proposed East Anglia ONE North Project Parameters (on the assumption that the proposed East Anglia TWO project is post-construction)	Notes
	<p>overhead line realignment works;</p> <ul style="list-style-type: none"> <li>The construction of the onshore infrastructure will result in some changes in ground profiles within and immediately around the National Grid substation permanent footprint and the stockpiling of subsoil/topsoil needed during the construction period. The construction of a SuDS pond will be required to provide a sustainable drainage solution for the National Grid substation; and</li> <li>Task and vehicle lighting may be used in the hours of darkness during approved working hours.</li> </ul>	<p>overhead line realignment works;</p> <ul style="list-style-type: none"> <li>The construction of the onshore infrastructure will result in some changes in ground profiles within and immediately around the National Grid substation permanent footprint and the stockpiling of subsoil/topsoil needed during the construction period. The construction of a SuDS pond will be required to provide a sustainable drainage solution for the National Grid substation; and</li> <li>Task and vehicle lighting may be used in the hours of darkness during approved working hours.</li> </ul>	
<b>Operation</b>			
Impacts related to the onshore cable corridor	<ul style="list-style-type: none"> <li>Permanent loss of 0.9ha of mature woodland as a result of the onshore cable route at Aldeburgh Road (Raidsend), on land to the south of Aldringham Court.</li> </ul>	Permanent loss of 0.9ha of mature woodland as a result of the onshore cable route at Aldeburgh Road (Raidsend), on land to the south of Aldringham Court.	It should be noted that jointing bays will be underground – there will be no surface infrastructure.
Impacts related to the onshore substation	<ul style="list-style-type: none"> <li>The effect on landscape character and visual amenity owing to the presence of the onshore substation with buildings up to 15m in height and electrical infrastructure up to 18m and occupying a site of 190m x 190m;</li> <li>The effect on landscape character and visual amenity owing to the presence of the new access road to the</li> </ul>	<ul style="list-style-type: none"> <li>The effect on landscape character and visual amenity owing to the presence of the onshore substation with buildings up to 15m in height and electrical infrastructure up to 18m and occupying a site of 190m x 190m;</li> <li>The effect on landscape character and visual amenity owing to the presence of the new access road to the</li> </ul>	Note that the operational footprint is relevant to substation infrastructure and does not include the additional landscaping footprint (which will be agreed post-PEIR).



Impact	Proposed East Anglia TWO Project Parameters	Proposed East Anglia ONE North Project Parameters (on the assumption that the proposed East Anglia TWO project is post-construction)	Notes
	<p>onshore substation off the B1122 Saxmundham Road;</p> <ul style="list-style-type: none"> <li>The effect of the re-establishment of hedgerows around the perimeter of the onshore substation, and the re-instatement of hedgerows over the onshore cable route into the onshore substation; and</li> <li>The establishment of substantial areas of new woodland planting around the onshore substation, as described in section <b>Error! Reference source not found.</b> and shown in the landscape mitigation plan (<b>Figure 29.11</b>).</li> </ul>	<p>onshore substation off the B1122 Saxmundham Road;</p> <ul style="list-style-type: none"> <li>The effect of the re-establishment of hedgerows around the perimeter of the onshore substation, and the re-instatement of hedgerows over the onshore cable route into the onshore substation; and</li> </ul> <p>The establishment of substantial areas of new woodland planting around the onshore substation, as described in section <b>Error! Reference source not found.</b> and shown in the landscape mitigation plan (<b>Figure 29.11</b>).</p>	
Impacts related to the National Grid Infrastructure	<ul style="list-style-type: none"> <li>The effect on landscape character and visual amenity owing to the presence of the National Grid substation (325m x 140m) with AIS electrical infrastructure up to 13m in height;</li> <li>The effect on landscape character and visual amenity owing to the presence of the new access road to the National Grid substation off the B1122 Saxmundham Road; and</li> <li>The establishment of substantial areas of new woodland planting around the onshore substation and National Grid substation, as described in <b>section Error! Reference source not found.</b> and shown in the landscape mitigation plan (<b>Figure 29.11</b>).</li> </ul>	<ul style="list-style-type: none"> <li>The effect on landscape character and visual amenity owing to the presence of the National Grid substation (325m x 140m) with AIS electrical infrastructure up to 13m in height;</li> <li>The effect on landscape character and visual amenity owing to the presence of the new access road to the National Grid substation off the B1122 Saxmundham Road; and</li> </ul> <p>The establishment of substantial areas of new woodland planting around the onshore substation and National Grid substation, as described in <b>section Error! Reference source not found.</b> and shown in the landscape mitigation plan (<b>Figure 29.11</b>).</p>	Design for the required overhead line (OHL) realignment work (including cable sealing end CCSs and pylon realignment CCS) is currently on going. As more detail is made available, this will be fully assessed and included in the Environmental Statement (ES) and DCO application. However, indicative locations for cable sealing end CCSs and pylon realignment CCS are shown in <b>Figure 6.6 of Chapter 6 Project Description</b> .



Impact	Proposed East Anglia TWO Project Parameters	Proposed East Anglia ONE North Project Parameters (on the assumption that the proposed East Anglia TWO project is post-construction)	Notes
<b>Decommissioning</b>			
<p>No decision has been made regarding the final decommissioning policy for the onshore infrastructure as it is recognised that industry best practice, rules and legislation change over time. However, the onshore substation will likely be removed and be reused or recycled. It is expected that the onshore cables will be removed and recycled, with the transition bays and cable ducts (where used) left <i>in situ</i>. The detail and scope of the decommissioning works will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, for the purposes of a worst-case scenario, impacts no greater than those identified for the construction phase are expected for the decommissioning phase.</p>			

## 29.2 Cumulative Effects with the Proposed East Anglia ONE North Project

### 29.2.1 Preliminary Assessment

13. The approach to the assessment of cumulative landscape and visual effects follows a two-stage process. Firstly, effects from the project alone assessment in **Appendix 29.2** and **Appendix 29.3** are presented in the Preliminary Assessment in **Table A29.3** below and assessed for potential to have significant cumulative effects with the proposed East Anglia TWO project. The same landscape and visual receptors have potential for significant cumulative effects for Scenario 1 and 2. Secondly, a technical assessment of those receptors with potential to undergo significant cumulative effects is presented in full in **Table A29.4** and **Table A29.5**, in respect of the relevant landscape and visual receptors during the construction and operational phase.



**Table A29.3 Potential Significant Cumulative Effects with East Anglia TWO – Preliminary Assessment**

Receptor/Impact	Potential for significant CONSTRUCTION STAGE cumulative effect - Scenario 1 and 2	Potential for significant OPERATIONAL cumulative effect - Scenario 1 and 2 (without mitigation)	Potential for significant OPERATIONAL cumulative effect - Scenario 1 and 2 (with mitigation)
<b>Landfall</b>			
<b>Landscape receptors</b>			
LCT05 Coastal Dunes and Shingle Ridges	No	No	No
Beach and coastal cliffs	No	No	No
LCT07 Estate Sandlands	Yes	No	No
Agricultural land	No	No	No
Hedgerows	No	No	No
Scrub/heathland	Yes	No	No
Suffolk Coast and Heaths AONB (and Heritage Coast) Area A: AONB between Thorpeness, Sizewell and Leiston	Yes	No	No
<b>Visual receptors</b>			
Thorpeness (residents)	Yes	No	No
B1353 Thorpeness Road (motorists)	Yes	No	No
Suffolk Coastal Path (walkers)	Yes	No	No
Sandlings Walk (walkers)	Yes	No	No
<b>Onshore Cable Route</b>			



Receptor/Impact	Potential for significant CONSTRUCTION STAGE cumulative effect - Scenario 1 and 2	Potential for significant OPERATIONAL cumulative effect - Scenario 1 and 2 (without mitigation)	Potential for significant OPERATIONAL cumulative effect - Scenario 1 and 2 (with mitigation)
<b>Landscape receptors</b>			
LCT 01 Ancient Estate Claylands Area A North of Friston, between Grove Road, Fristonmoor and Saxmundham Road	Yes	No	No
Agricultural land (within Area A)	No	No	No
Woodland (within Area A)	No	No	No
Hedgerows (within Area A)	No	No	No
LCT 01 Ancient Estate Claylands Area C East of Grove Wood, Knodishall	Yes	No	No
Agricultural land (within Area C)	No	No	No
Woodland (within Area C)	No	No	No
Hedgerows (within Area C)	No	No	No
LCT 01 Ancient Estate Claylands Area D Leiston and Theberton	No	No	No
LCT05 Coastal Dunes and Shingle Ridges	No	No	No
LCT 06 Coastal Levels Area A Hundred River Valley, south of Aldringham	No	No	No
LCT 06 Coastal Levels	No	No	No



Receptor/Impact	Potential for significant CONSTRUCTION STAGE cumulative effect - Scenario 1 and 2	Potential for significant OPERATIONAL cumulative effect - Scenario 1 and 2 (without mitigation)	Potential for significant OPERATIONAL cumulative effect - Scenario 1 and 2 (with mitigation)
Area B Former large meare to the south of Thorpeness			
LCT 06 Coastal Levels Area C Marshes of the Minsmere Level	No	No	No
LCT 07 Estate Sandlands Area A Thorpeness to Aldringham and Friston	Yes	Yes	Yes
Agricultural land (within Area A)	No	No	No
Woodland (within Area A, at Raidsend)	Yes	Yes	Yes
Hedgerows (within Area A)	No	No	No
Scrub/heathland (within Area A)	No	No	No
LCT 07 Estate Sandlands Area B Sizewell and north of Leiston to Dunwich Forest	No	No	No
LCT 07 Estate Sandlands Area C Aldeburgh to Snape	No	No	No
Suffolk Coast and Heaths AONB and Heritage Coast Area A: AONB between Thorpeness, Sizewell and Leiston	Yes	No	No
Suffolk Coast and Heaths AONB and Heritage Coast Area B: AONB between Thorpeness, Aldeburgh and Snape	Yes	No	No
Suffolk Coast and Heaths AONB and Heritage Coast	No	No	No



Receptor/Impact	Potential for significant CONSTRUCTION STAGE cumulative effect - Scenario 1 and 2	Potential for significant OPERATIONAL cumulative effect - Scenario 1 and 2 (without mitigation)	Potential for significant OPERATIONAL cumulative effect - Scenario 1 and 2 (with mitigation)
Section C: Sizewell and Dunwich Forest			
Hundred River Valley SLA Area A: Hundred River Valley, south of Aldringham	Yes	Yes	Yes
Hundred River Valley SLA Area B: Majority of the of the SLA	No	No	No
<b>Visual receptors</b>			
Leiston (residents)	No	No	No
Aldringham (residents)	Yes	Yes	Yes
Coldfair Green (residents)	Yes	No	No
Friston (residents)	Yes	No	No
B1353 Thorpeness Road (motorists)	Yes	No	No
B1122 Aldeburgh Road (motorists)	Yes	Yes	Yes
B1069 Snape Road (motorists)	Yes	No	No
B1121 Aldeburgh – Saxmundham Road (motorists)	No	No	No
Suffolk Coastal Path (walkers)	Yes	No	No
Sandlings Walk (walkers)	Yes	No	No
Suffolk Coastal Cycle Route (cyclists)	Yes	No	No



Receptor/Impact	Potential for significant CONSTRUCTION STAGE cumulative effect - Scenario 1 and 2	Potential for significant OPERATIONAL cumulative effect - Scenario 1 and 2 (without mitigation)	Potential for significant OPERATIONAL cumulative effect - Scenario 1 and 2 (with mitigation)
<b>Onshore Substation and National Grid substation</b>			
<b>Landscape receptors</b>			
LCT 01 Ancient Estate Claylands Area A North of Friston, between Grove Road, Fristonmoor and Saxmundham Road	Yes	Yes	Yes
Agricultural land (within Area A)	No	No	No
Woodland (within Area A)	No	No	No
Hedgerows (within Area A)	No	No	No
LCT 01 Ancient Estate Claylands Area B East of Saxmundham	No	No	No
Ancient Estate Claylands LCT (01) Area C East of Grove Wood, Knodishall	No	No	No
Agricultural land (within Area C)	No	No	No
Woodland (within Area C)	No	No	No
Hedgerows (within Area C)	No	No	No
LCT 01 Ancient Estate Claylands Area D Leiston and Theberton	No	No	No
LCT05 Coastal Dunes and Shingle Ridges	No	No	No



Receptor/Impact	Potential for significant CONSTRUCTION STAGE cumulative effect - Scenario 1 and 2	Potential for significant OPERATIONAL cumulative effect - Scenario 1 and 2 (without mitigation)	Potential for significant OPERATIONAL cumulative effect - Scenario 1 and 2 (with mitigation)
LCT 06 Coastal Levels	No	No	No
LCT 07 Estate Sandlands Area A Thorpeness to Aldringham and Friston	Yes	Yes	Yes
Agricultural land (within Area A)	No	No	No
Woodland (within Area A)	Yes	Yes	Yes
Hedgerows (within Area A)	No	No	No
LCT 07 Estate Sandlands Area B Sizewell and north of Leiston to Dunwich Forest	No	No	No
LCT 07 Estate Sandlands Area C Aldeburgh to Snape	No	No	No
Suffolk Coast and Heaths AONB and Heritage Coast	No	No	No
Hundred River Valley SLA	No	No	No
<b>Visual Receptors</b>			
Viewpoint 1: Public Right of Way near Friston House	Yes	Yes	No
Viewpoint 2: Friston, Church Road	Yes	Yes	No
Viewpoint 3: Grove Road, near Pear Tree Farm	No	No	No
Viewpoint 4: Friston, Grove Road	Yes	Yes	No
Viewpoint 5: Public Right of Way, near Moor Farm	Yes	Yes	No
Viewpoint 6: Friston, Village Green	No	No	No



Receptor/Impact	Potential for significant CONSTRUCTION STAGE cumulative effect - Scenario 1 and 2	Potential for significant OPERATIONAL cumulative effect - Scenario 1 and 2 (without mitigation)	Potential for significant OPERATIONAL cumulative effect - Scenario 1 and 2 (with mitigation)
Viewpoint 7: Public Right of Way, east of Friston	No	No	No
Viewpoint 8: B1121 Saxmundham Road, north of Friston	Yes	Yes	Yes
Viewpoint 9: B1121 Aldeburgh Road, south of Friston	Yes	Yes	Yes
Viewpoint 10: B1119 Saxmundham Road	No	No	No
Viewpoint 11: Knodishall Hall	No	No	No
Viewpoint 12: Knodishall Common	No	No	No
Viewpoint 13: B1069 Snape Road	No	No	No
Friston (residents)	Yes	Yes	Yes
B1121 Aldeburgh / Saxmundham Road	Yes	Yes	Yes
Grove Road	Yes	Yes	Yes
Suffolk Coastal Path	No	No	No
Suffolk Coastal Cycle Route	Yes	Yes	Yes
Sandling's Walk	No	No	No



### 29.2.2 Potential Cumulative Effects during Construction

14. The preliminary assessment concluded that the same landscape and visual receptors have potential for significant cumulative effects under construction Scenario 1 and 2. A technical assessment of those receptors with potential to undergo significant cumulative effects is presented in full in **Table A29.4** below. The summary of cumulative construction effects presented in **Table A29.4** below shows the effects under scenario 2 only, as the likely worst-case scenario. The magnitude of change is the same under construction scenario 1 and 2. The only difference being that under scenario 2 the effect is considered medium-term for the construction of the onshore substations and National Grid substation; landfall and onshore cable corridor - due to the duration of construction activities including the construction gap between each project, whereas under scenario 1 the effect is assessed as short-term.



**Table A29.4 Construction Stage Cumulative Effects with East Anglia TWO (Scenario 2)**

Receptor/Impact	Sensitivity to change	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (without mitigation)	Significance of Cumulative Effect East Anglia ONE North and East Anglia TWO (without mitigation)
<b>Landfall</b>			
<b>Cumulative Landscape Effects - Construction</b>			
LCT07 Estate Sandlands	Medium-high	Medium-high on localised area to the north of Thorpeness within landfall.	Significant, medium-term, temporary
Scrub/heathland	High	Medium	Significant, medium-term, temporary
Suffolk Coast and Heaths AONB (and Heritage Coast) Area A: AONB between Thorpeness, Sizewell and Leiston	Medium-high	Medium-high on localised area to the north of Thorpeness within landfall.	Significant, medium-term, temporary
<b>Cumulative Visual Effects - Construction</b>			
Thorpeness (residents)	High	High in views from a localised area on the northern and north-western edge of Thorpeness, adjacent to the landfall.  Negligible from the majority of the central and southern areas of the settlement.	Significant, medium-term and temporary along north and north-west edge of Thorpeness, adjacent to the landfall.  Not significant, medium-term and temporary from the majority of the central and southern areas of the settlement.
B1353 Thorpeness Road (motorists)	Medium	High from a short (750m) section of the B1353, to the east of Thorpeness, where the landfall is located immediately the north of the road.  Negligible from the remainder of the B1353.	Significant, medium-term and temporary over a short (750m) section of the B1353, to the east of Thorpeness.  Not significant, medium-term and temporary over remainder of B1353.



Receptor/Impact	Sensitivity to change	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (without mitigation)	Significance of Cumulative Effect East Anglia ONE North and East Anglia TWO (without mitigation)
Suffolk Coastal Path (walkers)	High	High over a short (1.0km) section of the route, to the north of Thorpeness, where the route of the path crosses the landfall.  Negligible over the remainder of the Suffolk Coastal Path.	Significant, medium-term and temporary over a short (1.0km) section of the route, to the north of Thorpeness, where the route of the path crosses the landfall.  Not significant, medium-term and temporary over the remainder of the Suffolk Coastal Path.
Sandlings Walk (walkers)	Medium - high	High over a short (1.0km) section of the route, to the north of Thorpeness, where the route of the path crosses the landfall.  Negligible over the remainder of the Sandling's Walk.	Significant, medium-term and temporary over a short (1.0km) section of the route, to the north of Thorpeness, where the route of the path crosses the landfall.  Not significant, medium-term and temporary over the remainder of the Sandling's Walk.
<b>Onshore Cable Route</b>			
<b>Cumulative Landscape Effects - Construction</b>			
LCT 01 Ancient Estate Claylands Area A North of Friston, between Grove Road, Fristonmoor and Saxmundham Road	Medium-high	Medium on localised area to north of Friston at western end of onshore cable route near the onshore substation and National Grid substation.  Low to negligible over remaining areas LCT.	Significant, medium-term and temporary on localised area to north of Friston at western end of onshore cable route near the onshore substation and National Grid substation.  Not significant, medium-term and temporary over remaining areas of LCT.
Ancient Estate Claylands LCT (01)	Medium-high	Medium	Significant, medium-term, temporary



Receptor/Impact	Sensitivity to change	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (without mitigation)	Significance of Cumulative Effect East Anglia ONE North and East Anglia TWO (without mitigation)
Area C East of Grove Wood, Knodishall			
LCT 07 Estate Sandlands Area A Thorpeness to Aldringham and Friston	Medium-high	Medium-high within and adjacent to the onshore cable route.	Significant, medium-term, temporary within and adjacent to the onshore cable route.
Woodland (within Area A at Raidsend)	High	Medium-high	Significant, medium-term, temporary
Suffolk Coast and Heaths AONB and Heritage Coast  Area A: AONB between Thorpeness, Sizewell and Leiston	High	<u>Special Qualities</u>  Landscape quality: High Scenic quality: High Relative wildness: High Relative tranquillity: Medium Natural heritage features: Medium Cultural heritage: Low	<u>Special Qualities</u>  Landscape quality: Significant, medium- term, temporary Scenic quality: Significant, medium- term, temporary Relative wildness: Significant, medium- term, temporary Relative tranquillity: Significant, medium- term, temporary Natural heritage features: Significant, medium-term, temporary Cultural heritage: Not significant, medium-term, temporary
Suffolk Coast and Heaths AONB and Heritage Coast  Area B: AONB between Thorpeness, Aldeburgh and Snape	Medium-high	<u>Special Qualities</u>  Landscape quality: Low Scenic quality: Low Relative wildness: Low Relative tranquillity: Low	<u>Special Qualities</u>  Landscape quality: Not significant, medium-term, temporary  Scenic quality: Not significant, medium- term, temporary



Receptor/Impact	Sensitivity to change	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (without mitigation)	Significance of Cumulative Effect East Anglia ONE North and East Anglia TWO (without mitigation)
		Natural heritage features: Low Cultural heritage: Low	Relative wildness: Not significant, medium-term, temporary Relative tranquillity: Not significant, medium-term, temporary Natural heritage features: Not significant, medium-term, temporary Cultural heritage: Not significant, medium-term, temporary
Hundred River Valley SLA Area A: Hundred River Valley, south of Aldringham	Medium	Medium-high over a local area at Raisdend, due to the felling of mature woodland	Significant, medium-term, temporary
<b>Cumulative Visual Effects - Construction</b>			
Aldringham (residents)	High	High where it crosses the Hundred River and Aldeburgh Road, where the construction of the onshore cable route will be visible in views from nearby dwellings and felling of a notable area of mature woodland at Raisdend is required.  Low on its route to the east of the settlement crossing the B1353 Thorpeness Road	Significant, medium-term and temporary along Aldeburgh Road  Not significant, medium-term, temporary from the remainder of the settlement
Coldfair Green (residents)	High	High in views from a localised area on the southern edge of the settlement.	Significant, medium-term and temporary on south edge of Coldfair Green.  Not significant, medium-term, temporary from the majority of the settlement.



Receptor/Impact	Sensitivity to change	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (without mitigation)	Significance of Cumulative Effect East Anglia ONE North and East Anglia TWO (without mitigation)
		Negligible from the majority of the settlement where there will be no direct views of the onshore infrastructure.	
Friston (residents)	High	Medium to high from localised area on the northern edges of Friston.  Negligible from the majority of central and southern areas of Friston.	Significant, medium-term, temporary from the northern edges of Friston.  Not significant, medium-term, temporary from the majority of central and southern areas of Friston.
B1353 Thorpeness Road (motorists)	Medium	High over a short 500m section of the B1353 to the east of Aldringham where the onshore cable route crosses the B1353.  Negligible over the remainder of the B1353.	Significant, medium-term, temporary over approx. 500m section east of Aldringham.  Not significant, medium-term and temporary over remainder of B1353.
B1122 Aldeburgh Road (motorists)	Medium	High over a short 300m section of the B1122, to the south of Aldringham, where the onshore cable route crosses the B1122.  Negligible over the remainder of the B1122.	Significant, medium-term, temporary over a short 300m section of the B1122, to the south of Aldringham, where the onshore cable route crosses the B1122.  Not significant, medium-term, temporary over the remainder of the B1122.
B1069 Snape Road (motorists)	Medium	High over a short 500m section of the B1069, to the south of Coldfair Green, where the onshore cable route crosses the B1069.  Negligible over the remainder of the B1069.	Significant, medium-term, temporary over a short 500m section of the B1069, to the south of Coldfair Green, where the onshore cable route crosses the B1069.  Not significant, medium-term, temporary over the remainder of the B1069.



Receptor/Impact	Sensitivity to change	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (without mitigation)	Significance of Cumulative Effect East Anglia ONE North and East Anglia TWO (without mitigation)
Suffolk Coastal Path (walkers)	High	High over a short 1.5km section of the route to the north of Thorpeness, where the onshore cable route crosses or is adjacent to the Suffolk Coastal Path.  Negligible over the remainder of the Suffolk Coastal Path.	Significant, medium-term, temporary over a short 1.5km section of the route to the north of Thorpeness, where the onshore cable route crosses or is adjacent to the Suffolk Coastal Path  Not significant, medium-term, temporary over the remainder of the Suffolk Coastal Path.
Sandlings Walk (walkers)	Medium - high	High over two sections of the route: from the edge of Friston to Great Wood for approximately 3.5km where the route runs parallel to and subsequently crosses the onshore cable route; and from the edge of Aldringham Common to Sizewell for approximately 2.0km where the route crosses through and then runs parallel to the onshore cable route.  Negligible for the remainder of the route of the Sandling's Walk.	Significant, medium-term and temporary over approx. 3.5km section north-east of Friston and approx. 2km section south of Sizewell.  Not significant, medium-term, temporary for the remainder of the route.
Suffolk Coastal Cycle Route (cyclists)	Medium - high	High over a short 1km section of the route, along Grove Road between Friston and Grove Wood, where the onshore cable route crosses or is adjacent to the route of Suffolk Coastal Cycle Route.  Negligible for the remainder of the route of the Suffolk Coastal Cycle Route.	Significant, medium-term and temporary over approx. 1km section on Grove Road between Friston and Grove Wood.  Not significant, medium-term, temporary for the remainder of the route.



Receptor/Impact	Sensitivity to change	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (without mitigation)	Significance of Cumulative Effect East Anglia ONE North and East Anglia TWO (without mitigation)
<b>Onshore Substation and National Grid substation</b>			
<b>Cumulative Landscape Effects - Construction</b>			
LCT 01 Ancient Estate Claylands Area A North of Friston, between Grove Road, Fristonmoor and Saxmundham Road	Medium-high	High on localised area to north of Friston within approximately 1.0km around the onshore substation and National Grid substation.  Low to negligible over remaining areas of the LCT.	<b>Significant</b> , medium-term and temporary on localised area to north of Friston within approximately 1.0km around the onshore substation and National Grid substation.  <b>Not significant</b> , medium-term and temporary over remaining areas of LCT.
LCT 07 Estate Sandlands Area A Thorpeness to Aldringham and Friston	Medium-high	High on localised area to north of Friston within approximately 1.0km around the onshore substation and National Grid substation.  Low to negligible over remaining areas of the LCT.	<b>Significant</b> , medium-term and temporary on localised area to north of Friston within approximately 1.0km around the onshore substation and National Grid substation.  <b>Not significant</b> , medium-term and temporary over remaining areas of LCT.
Woodland (within Area A)	High	Medium-high due to the combined impact of felling small area of Laurel Covert woodland at the edge of East TWO onshore substation and stand of woodland within East Anglia ONE North onshore substation.	<b>Significant</b> , medium-term, temporary
<b>Cumulative Visual Effects - Construction</b>			
Viewpoint 1: Public Right of Way near Friston House	Walkers: medium-high	High	<b>Significant</b> , medium-term, temporary



Receptor/Impact	Sensitivity to change	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (without mitigation)	Significance of Cumulative Effect East Anglia ONE North and East Anglia TWO (without mitigation)
	Residents: high		
Viewpoint 2: Friston, Church Road	Walkers: medium-high Residents: high	High	<b>Significant</b> , medium-term, temporary
Viewpoint 4: Friston, Grove Road	Walkers: medium-high Residents: high Motorists: medium	High	Walkers and residents: <b>Significant</b> , long-term, temporary Motorists: <b>Significant</b> , medium-term, temporary
Viewpoint 5: Public Right of Way, near Moor Farm	Walkers: medium-high Residents: high	High	<b>Significant</b> , medium-term, temporary
Viewpoint 8: B1121 Saxmundham Road, north of Friston	Residents: high Motorists: medium	Medium-high	Residents: <b>Significant</b> , medium-term, temporary Motorists: <b>Significant</b> , medium-term, temporary
Viewpoint 9: B1121 Aldeburgh Road, south of Friston	Residents: high Motorists: medium	Medium	Residents: <b>Significant</b> , medium-term, temporary Motorists: <b>Not significant</b> , medium-term, temporary
Friston Area A (northern part) (residents)	Residents: high	High	<b>Significant</b> , medium-term, temporary
Friston Area B (central part) (residents)	Residents: high	Low	<b>Not significant</b> , medium-term, temporary
Friston	Residents: high	Medium	<b>Significant</b> , medium-term, temporary



Receptor/Impact	Sensitivity to change	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (without mitigation)	Significance of Cumulative Effect East Anglia ONE North and East Anglia TWO (without mitigation)
Area C (Aldeburgh Road) (residents)			
Friston Area D (southern part) (residents)	Residents: high	Low	<b>Not significant</b> , medium-term, temporary
B1121 Aldeburgh / Saxmundham Road Section B North of Moor Farm to Friston House (Saxmundham Road)	Motorists: medium	Medium-high	<b>Significant</b> , medium-term, temporary
Grove Road Section B Grove Wood (Manor Farm) to northern edge of Friston	Motorists: medium	High	<b>Significant</b> , medium-term, temporary
Suffolk Coastal Cycle Route: Section B Grove Wood (Manor Farm) to northern edge of Friston	Cyclists: medium - high	High	<b>Significant</b> , medium-term, temporary



### 29.2.3 Potential Cumulative Effects during Operation

15. The approach to the assessment of cumulative landscape and visual effects during operation follows a two-stage process. Firstly, effects from the project alone assessment in **Appendix 29.2 and Appendix 29.3** are presented in the Preliminary Assessment in **Table A29.3** and assessed for potential to have significant cumulative effects with the proposed East Anglia TWO project. Secondly, a technical assessment of those receptors with potential to undergo significant cumulative effects is presented in full in **Table A29.5** in respect of the relevant landscape and visual receptors.
16. The potential cumulative effects during operation would occur primarily in relation to the presence of the East Anglia ONE North and East Anglia TWO onshore substations and National Grid infrastructure. The assessment considers potential cumulative effects on the landscape character and visual amenity of the site and surrounding area, taking into account the maturing of mitigation planting during the operational phase. The potential cumulative effects of the onshore cable route during operation are also assessed in relation to the removal of woodland at the Aldeburgh Road crossing (Raidsend).



**Table A29.5 Operational Stage Cumulative Effects with East Anglia ONE North**

Receptor/Impact	Sensitivity to change	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (without mitigation)	Significance of Cumulative Effect East Anglia ONE North and East Anglia TWO (without mitigation)	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (with mitigation 15 years post construction)	Significance of Effect East Anglia ONE North and East Anglia TWO (with mitigation 15 years post construction)
<b>Onshore Cable Route</b>					
<b>Cumulative Landscape Effects - Operation</b>					
LCT 07 Estate Sandlands Area A Thorpeness to Aldringham and Friston	Medium-high	Medium-high within a local area of the LCT at Raidsend, due to the felling of mature woodland.  Low/negligible over the remainder of this area of the LCT.	Significant, long-term, permanent within a local area of the LCT at Raidsend, due to the felling of mature woodland.  Not significant, long-term, permanent over the remainder of this area of the LCT.	Medium-high within a local area of the LCT at Raidsend, due to the felling of mature woodland.  Low/negligible over the remainder of this area of the LCT.	Significant, long-term, permanent within a local area of the LCT at Raidsend, due to the felling of mature woodland.  Not significant, long-term, permanent over the remainder of this area of the LCT.
Woodland (within Area A)	High	Medium-high due to felling of mature woodland at Raidsend.	Significant, long-term, permanent due to felling of mature woodland at Raidsend.	Medium-high due to felling of mature woodland at Raidsend.	Significant, long-term, permanent due to felling of mature woodland at Raidsend.
Hundred River Valley SLA  Area A: Hundred River Valley, south of Aldringham	Medium	Medium-high within a local area at Raidsend, due to the felling of mature woodland.  Low/negligible over the remainder of the SLA.	Significant, long-term, permanent within a local area of the SLA at Raidsend, due to the felling of mature woodland.	Medium-high within a local area at Raidsend, due to the felling of mature woodland.  Low/negligible over the remainder of the SLA.	Significant, long-term, permanent within a local area of the SLA at Raidsend, due to the felling of mature woodland.



Receptor/Impact	Sensitivity to change	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (without mitigation)	Significance of Cumulative Effect East Anglia ONE North and East Anglia TWO (without mitigation)	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (with mitigation 15 years post construction)	Significance of Effect East Anglia ONE North and East Anglia TWO (with mitigation 15 years post construction)
			Not significant, long-term, permanent over the remainder of the SLA.		Not significant, long-term, permanent over the remainder of the SLA.
<b>Cumulative Visual Effects - Operation</b>					
Aldringham (residents)	High	High in the vicinity of the Aldeburgh Road crossing, where the felling of a notable area of mature woodland at Raidsend will change the local visual amenity.  Negligible from the remainder of the settlement.	Significant, long-term, permanent in the vicinity of the Aldeburgh Road crossing, where the felling of a notable area of mature woodland at Raidsend will change the local visual amenity.  Not significant, long-term, permanent from the remainder of the settlement.	High in the vicinity of the Aldeburgh Road crossing, where the felling of a notable area of mature woodland at Raidsend will change the local visual amenity.  Negligible from the remainder of the settlement.	Significant, long-term, permanent in the vicinity of the Aldeburgh Road crossing, where the felling of a notable area of mature woodland at Raidsend will change the local visual amenity.  Not significant, long-term, permanent from the remainder of the settlement.
B1122 Aldeburgh Road (motorists)	Medium	High over a short 300m section of the B1122, to the south of Aldringham, where the onshore cable route crosses the B1122.  Negligible over the remainder of the B1122.	Significant, long-term, permanent over a short 300m section of the B1122, to the south of Aldringham, where the onshore cable route crosses the B1122.  Not significant, long-term, permanent over the remainder of the B1122.	High over a short 300m section of the B1122, to the south of Aldringham, where the onshore cable route crosses the B1122.  Negligible over the remainder of the B1122.	Significant, long-term, permanent over a short 300m section of the B1122, to the south of Aldringham, where the onshore cable route crosses the B1122.  Not significant, long-term, permanent over the remainder of the B1122.



Receptor/Impact	Sensitivity to change	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (without mitigation)	Significance of Cumulative Effect East Anglia ONE North and East Anglia TWO (without mitigation)	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (with mitigation 15 years post construction)	Significance of Effect East Anglia ONE North and East Anglia TWO (with mitigation 15 years post construction)
<b>Onshore Substation and National Grid substation</b>					
<b>Cumulative Landscape Effects - Operation</b>					
LCT 01 Ancient Estate Claylands Area A North of Friston, between Grove Road, Fristonmoor and Saxmundham Road	Medium-high	High on localised area to the north of Friston within approximately 1.0km around the onshore substation and National Grid substation.  Low to negligible over remaining areas of the LCT.	<b>Significant</b> , long-term and temporary on localised area to north of Friston within approximately 1.0km around the onshore substation and National Grid substation.  <b>Not significant</b> , long-term and temporary over remaining areas of LCT.	Medium-high, on localised area to north of Friston within approximately 1.0km around the onshore substation and National Grid substation.  Low to negligible over remaining areas of the LCT.	<b>Significant</b> , long-term and permanent on localised area to north of Friston within approximately 1.0km around the onshore substation and National Grid substation.  <b>Not significant</b> , long-term and permanent over remaining areas of LCT.
LCT 07 Estate Sandlands Area A Thorpeness to Aldringham and Friston	High	High on the localised area to north of Friston within approximately 1.0km around the onshore substation and National Grid substation.  Low to negligible over remaining areas of the LCT.	<b>Significant</b> , long-term and temporary on localised area to north of Friston within approximately 1.0km around the onshore substation and National Grid substation.  <b>Not significant</b> , long-term and temporary over remaining areas of LCT.	Medium-high on localised area to north of Friston within approximately 1.0km around the onshore substation and National Grid substation.  Low to negligible over remaining areas of the LCT.	<b>Significant</b> , long-term and permanent on localised area to north of Friston within approximately 1.0km around the onshore substation and National Grid substation.  <b>Not significant</b> , long-term and permanent over remaining areas of LCT.



Receptor/Impact	Sensitivity to change	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (without mitigation)	Significance of Cumulative Effect East Anglia ONE North and East Anglia TWO (without mitigation)	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (with mitigation 15 years post construction)	Significance of Effect East Anglia ONE North and East Anglia TWO (with mitigation 15 years post construction)
					remaining areas of the LCT.
<b>Cumulative Visual Effects - Operation</b>					
Viewpoint 1: Public Right of Way near Friston House	Walkers: medium-high Residents: high	High	Significant, long-term, temporary	None	Not significant, long-term, permanent (note that the woodland planting which will be in the immediate foreground of the view is not shown in Figure 29.13c).
Viewpoint 2: Friston, Church Road	Walkers: medium-high Residents: high	High	Significant, long-term, temporary	Low	Not significant, long-term, permanent
Viewpoint 4: Friston, Grove Road	Walkers: medium-high Residents: high Motorists: medium	High	Walkers and residents: Significant, long-term, temporary Motorists: Significant, long-term, temporary	Negligible	Not significant, long-term, permanent
Viewpoint 5: Public Right of Way, near Moor Farm	Walkers: medium-high Residents: high	High	Significant, long-term, temporary	Low	Not significant, long-term, permanent



Receptor/Impact	Sensitivity to change	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (without mitigation)	Significance of Cumulative Effect East Anglia ONE North and East Anglia TWO (without mitigation)	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (with mitigation 15 years post construction)	Significance of Effect East Anglia ONE North and East Anglia TWO (with mitigation 15 years post construction)
Viewpoint 8: B1121 Saxmundham Road, north of Friston	Residents: high Motorists: medium	Medium-high	Residents: Significant, long-term, temporary Motorists: Significant, long-term, temporary	Medium	Residents: Significant, long-term, permanent Motorists: Not significant, long-term, permanent
Viewpoint 9: B1121 Aldeburgh Road, south of Friston	Residents: high Motorists: medium	Medium	Residents: Significant, long-term, temporary Motorists: Not significant, long-term, temporary	Medium	Residents: Significant, long-term, permanent Motorists: Not significant, long-term, permanent
Friston Area A (northern part) (residents)	Residents: high	High	Significant, long-term, temporary	Low	Not significant, long-term, permanent
Friston Area B (central part) (residents)	Residents: high	Low	Not significant, long-term, temporary	Negligible	Not significant, long-term, permanent
Friston Area C (Aldeburgh Road) (residents)	Residents: high	Medium	Significant, long-term, temporary.	Medium	Significant, long-term, permanent
Friston Area D (southern part) (residents)	Residents: high	Low	Not significant, long-term, temporary	Negligible	Not significant, long-term, permanent



Receptor/Impact	Sensitivity to change	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (without mitigation)	Significance of Cumulative Effect East Anglia ONE North and East Anglia TWO (without mitigation)	Cumulative magnitude of change East Anglia ONE North and East Anglia TWO (with mitigation 15 years post construction)	Significance of Effect East Anglia ONE North and East Anglia TWO (with mitigation 15 years post construction)
B1121 Aldeburgh / Saxmundham Road Section B North of Moor Farm to Friston House (Saxmundham Road)	Motorists: medium	Medium-high	Significant, long-term, temporary.	Medium	Not significant, long-term, permanent
Grove Road Section B Grove Wood (Manor Farm) to northern edge of Friston	Motorists: medium	High	Significant, long-term, temporary	Medium-high	Significant, long-term, permanent
Suffolk Coastal Cycle Route: Section B Grove Wood (Manor Farm) to northern edge of Friston	Cyclists: medium - high	High	Significant, long-term, temporary	Medium-high	Significant, long-term, permanent



#### 29.2.4 Cumulative Effects during Decommissioning with East Anglia ONE North

17. Decommissioning of the proposed East Anglia ONE North project may potentially take place at the same time as the proposed East Anglia TWO project. The detail and scope of the decommissioning works for the proposed East Anglia ONE North project will be determined by the relevant legislation and guidance at the time of decommissioning and agreed with the regulator. A decommissioning plan will be provided. As such, cumulative effects during the decommissioning stage are assumed to be no worse than those identified during the construction stage.

### 29.3 Cumulative Effects with the Sizewell C Project

#### 29.3.1 Preliminary Assessment

18. Following a review of projects which have the potential to overlap temporally or spatially with the proposed East Anglia ONE North project, one further development has been scoped into the cumulative landscape and visual effect assessment. **Table A29.6** below provides detail regarding the project.
19. It is likely that there may be a number of additional projects to be considered as part of the CIA in the ES, and the full list of projects for consideration will be updated following PEIR and agreed in consultation with local authorities. The remainder of the section details the nature of the cumulative effects against all those receptors scoped in for cumulative assessment.



**Table A29.6 Summary of Projects Considered for the CIA in Relation to LVIA**

Project	Status	Development period	<sup>1</sup> Distance from East Anglia ONE North proposed onshore development area (km)	Project definition	Project data status	Included in CIA?	Rationale
Sizewell C New Nuclear Power Station	Scoping Opinion Adopted by SoS on 02.06.2014	Uncertain	0.49km	Full Scoping Report Available: <a href="https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010012/EN010012-000103-Sizewell%20C%20EIA%20Scoping%20Report_Main%20text.pdf">https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010012/EN010012-000103-Sizewell%20C%20EIA%20Scoping%20Report_Main%20text.pdf</a>	Tier 5 <sup>2</sup>	Yes	Potential overlap of construction and operational phases

<sup>1</sup> Shortest distance between the considered project and East Anglia ONE North– unless specified otherwise

<sup>2</sup> Based on criteria outlined in **section 5.7.2** of **Chapter 5 EIA Methodology**



20. The approach to the assessment of cumulative landscape and visual effects of the proposed East Anglia ONE North onshore infrastructure and East Anglia TWO onshore infrastructure with Sizewell C New Nuclear Power Station follows a two-stage process. Firstly, effects from project alone assessment in **Appendix 29.2** and **Appendix 29.3** are presented in the Preliminary Assessment in **Table A29.7** below and assessed for potential to have significant cumulative effects with Sizewell C New Nuclear Power Station. Secondly, a technical assessment of those receptors with potential to undergo significant cumulative effects is presented in full in **Table A29.7**, in respect of the relevant landscape and visual receptors.



**Table A29.7 Potential Significant Cumulative Effects with Sizewell C Sizewell C New Nuclear Power Station – Preliminary Assessment**

Receptor/Impact	Potential for significant CONSTRUCTION STAGE cumulative effect	Potential for significant OPERATIONAL cumulative effect (without mitigation)	Potential for significant OPERATIONAL cumulative effect (with mitigation)
<b>Landfall</b>			
<b>Landscape receptors</b>			
LCT05 Coastal Dunes and Shingle Ridges	No	No	No
Beach and coastal cliffs	No	No	No
LCT07 Estate Sandlands	Yes	No	No
Agricultural land	No	No	No
Hedgerows	No	No	No
Scrub/heathland	No	No	No
Suffolk Coast and Heaths AONB (and Heritage Coast) Area A: AONB between Thorpeness, Sizewell and Leiston	Yes	No	No
<b>Visual receptors</b>			
Thorpeness (residents)	No	No	No
B1353 Thorpeness Road (motorists)	No	No	No
Suffolk Coastal Path (walkers)	Yes	No	No
Sandlings Walk (walkers)	Yes	No	No
<b>Onshore Cable Route</b>			



Receptor/Impact	Potential for significant CONSTRUCTION STAGE cumulative effect	Potential for significant OPERATIONAL cumulative effect (without mitigation)	Potential for significant OPERATIONAL cumulative effect (with mitigation)
<b>Landscape receptors</b>			
LCT 01 Ancient Estate Claylands Area A North of Friston, between Grove Road, Fristonmoor and Saxmundham Road	No	No	No
Agricultural land (within Area A)	No	No	No
Woodland (within Area A)	No	No	No
Hedgerows (within Area A)	No	No	No
LCT 01 Ancient Estate Claylands Area C East of Grove Wood, Knodishall	No	No	No
Agricultural land (within Area C)	No	No	No
Woodland (within Area C)	No	No	No
Hedgerows (within Area C)	No	No	No
LCT 01 Ancient Estate Claylands Area D Leiston and Theberton	No	No	No
LCT05 Coastal Dunes and Shingle Ridges	No	No	No
LCT 06 Coastal Levels Area A Hundred River Valley, south of Aldringham	No	No	No
LCT 06 Coastal Levels Area B Former large meare to the south of Thorpeness	No	No	No



Receptor/Impact	Potential for significant CONSTRUCTION STAGE cumulative effect	Potential for significant OPERATIONAL cumulative effect (without mitigation)	Potential for significant OPERATIONAL cumulative effect (with mitigation)
LCT 06 Coastal Levels Area C Marshes of the Minsmere Level	No	No	No
LCT 07 Estate Sandlands Area A Thorpeness to Aldringham and Friston	Yes	No	No
Agricultural land (within Area A)	No	No	No
Woodland (within Area A)	No	No	No
Hedgerows (within Area A)	No	No	No
Scrub/heathland (within Area A)	No	No	No
LCT 07 Estate Sandlands Area B Sizewell and north of Leiston to Dunwich Forest	Yes	No	No
LCT 07 Estate Sandlands Area C Aldeburgh to Snape	No	No	No
Suffolk Coast and Heaths AONB and Heritage Coast Area A: AONB between Thorpeness, Sizewell and Leiston	Yes	No	No
Suffolk Coast and Heaths AONB and Heritage Coast Area B: AONB between Thorpeness, Aldeburgh and Snape	No	No	No
Suffolk Coast and Heaths AONB and Heritage Coast Section C: Sizewell and Dunwich Forest	Yes	No	No
Hundred River Valley SLA Area A: Hundred River Valley, south of Aldringham	No	No	No



Receptor/Impact	Potential for significant CONSTRUCTION STAGE cumulative effect	Potential for significant OPERATIONAL cumulative effect (without mitigation)	Potential for significant OPERATIONAL cumulative effect (with mitigation)
Hundred River Valley SLA Area B: Majority of the of the SLA	No	No	No
<b>Visual receptors</b>			
Leiston (residents)	Yes	No	No
Aldringham (residents)	No	No	No
Coldfair Green (residents)	No	No	No
Friston (residents)	No	No	No
B1353 Thorpeness Road (motorists)	No	No	No
B1122 Aldeburgh Road (motorists)	Yes	No	No
B1069 Snape Road (motorists)	No	No	No
B1121 Aldeburgh – Saxmundham Road (motorists)	No	No	No
Suffolk Coastal Path (walkers)	Yes	No	No
Sandlings Walk (walkers)	Yes	No	No
Suffolk Coastal Cycle Route (cyclists)	Yes	No	No
<b>Onshore Substation and National Grid substation</b>			
<b>Landscape receptors</b>			
LCT 01 Ancient Estate Claylands	No	No	No



Receptor/Impact	Potential for significant CONSTRUCTION STAGE cumulative effect	Potential for significant OPERATIONAL cumulative effect (without mitigation)	Potential for significant OPERATIONAL cumulative effect (with mitigation)
Area A North of Friston, between Grove Road, Fristonmoor and Saxmundham Road			
Agricultural land (within Area A)	No	No	No
Woodland (within Area A)	No	No	No
Hedgerows (within Area A)	No	No	No
LCT 01 Ancient Estate Claylands Area B East of Saxmundham	No	No	No
Ancient Estate Claylands LCT (01) Area C East of Grove Wood, Knodishall	No	No	No
Agricultural land (within Area C)	No	No	No
Woodland (within Area C)	No	No	No
Hedgerows (within Area C)	No	No	No
LCT 01 Ancient Estate Claylands Area D Leiston and Theberton	No	No	No
LCT05 Coastal Dunes and Shingle Ridges	No	No	No
LCT 06 Coastal Levels	No	No	No
LCT 07 Estate Sandlands Area A Thorpeness to Aldringham and Friston	Yes	Yes	Yes
Agricultural land (within Area A)	No	No	No



Receptor/Impact	Potential for significant CONSTRUCTION STAGE cumulative effect	Potential for significant OPERATIONAL cumulative effect (without mitigation)	Potential for significant OPERATIONAL cumulative effect (with mitigation)
Woodland (within Area A)	No	No	No
Hedgerows (within Area A)	No	No	No
LCT 07 Estate Sandlands Area B Sizewell and north of Leiston to Dunwich Forest	Yes	Yes	Yes
LCT 07 Estate Sandlands Area C Aldeburgh to Snape	No	No	No
Suffolk Coast and Heaths AONB and Heritage Coast	No	No	No
Hundred River Valley SLA	No	No	No
<b>Visual Receptors</b>			
Viewpoint 1: Public Right of Way near Friston House	No	No	No
Viewpoint 2: Friston, Church Road	No	No	No
Viewpoint 3: Grove Road, near Pear Tree Farm	No	No	No
Viewpoint 4: Friston, Grove Road	No	No	No
Viewpoint 5: Public Right of Way, near Moor Farm	No	No	No
Viewpoint 6: Friston, Village Green	No	No	No
Viewpoint 7: Public Right of Way, east of Friston	No	No	No
Viewpoint 8: B1121 Saxmundham Road, north of Friston	No	No	No
Viewpoint 9: B1121 Aldeburgh Road, south of Friston	No	No	No



Receptor/Impact	Potential for significant CONSTRUCTION STAGE cumulative effect	Potential for significant OPERATIONAL cumulative effect (without mitigation)	Potential for significant OPERATIONAL cumulative effect (with mitigation)
Viewpoint 10: B1119 Saxmundham Road	No	No	No
Viewpoint 11: Knodishall Hall	No	No	No
Viewpoint 12: Knodishall Common	No	No	No
Viewpoint 13: B1069 Snape Road	No	No	No
Friston (residents)	No	No	No
B1121 Aldeburgh / Saxmundham Road	No	No	No
Grove Road	No	No	No
Suffolk Coastal Path	No	No	No
Suffolk Coastal Cycle Route	No	No	No
Sandling's Walk	No	No	No



### 29.3.2 Potential Cumulative Effects during Construction

21. A technical assessment of those receptors with potential to undergo significant construction stage cumulative effects with Sizewell C New Nuclear Power Station is presented in full in **Table A29.8** below. The effects assessment in **Table A29.8** assumes that the construction period for the East Anglia ONE North and East Anglia TWO onshore infrastructure occurs during the 10-12 year construction period expected for Sizewell C New Nuclear Power Station.

**Table A29.8 Construction Stage Cumulative Effects with Sizewell C New Nuclear Power Station**

Receptor	Sensitivity to change	Cumulative magnitude of change with Sizewell C (without mitigation)	Significance of Cumulative Effect with Sizewell C (without mitigation)
<b>Landfall</b>			
<b>Cumulative Landscape Effects</b>			
LCT07 Estate Sandlands	Medium-high	Low due to the distance between the landfall and Sizewell C, their visual separation by large areas of Sandlings Forest and coastline, and the relatively small scale of the construction works/footprint of the landfall.	Not significant, medium-term and temporary.
Suffolk Coast and Heaths AONB (and Heritage Coast) Area A: AONB between Thorpeness, Sizewell and Leiston	Medium-high	Low due to the distance between the landfall and Sizewell C, their visual separation by large areas of Sandlings Forest and coastline, and the relatively small scale of the construction works/footprint of the landfall.	Not significant, medium-term and temporary.
<b>Cumulative Visual Effects</b>			
Suffolk Coastal Path (walkers)	Medium-high	High sequential change to views experienced over a 1km section of the route, to the north of Thorpeness, where the route of the path crosses the landfall and over a 5 km section of the route between Sizewell and Dunwich Heath, where the Suffolk Coastal Path passes in close proximity to the construction of Sizewell C.	Significant, medium-term and temporary sequential effect to views experienced over a 1km section of the route, to the north of Thorpeness, where the route of the path crosses the landfall and over a 5 km section of the route between Sizewell and Dunwich Heath, where the Suffolk Coastal Path passes in close proximity



Receptor	Sensitivity to change	Cumulative magnitude of change with Sizewell C (without mitigation)	Significance of Cumulative Effect with Sizewell C (without mitigation)
		Low over the remainder of the Suffolk Coastal Path.	to the construction of Sizewell C  Not significant, short-term and temporary over the remainder of the Suffolk Coastal Path.
Sandlings Walk (walkers)	Medium-high	High sequential change to views experienced over a 1.0km section of the route, to the north of Thorpeness, where the route of the path crosses the landfall and over a 6km section of the route between Sizewell, Minsmere Haven, Leiston Abbey and Eastbridge where the walk passing through the Sizewell C construction area.  Low over the remainder of the Sandling's Walk.	Significant, short-term and temporary sequential effect to views experienced over a 1km section of the route, to the north of Thorpeness, where the route of the path crosses the landfall and over a 6km section of the route between Sizewell, Minsmere Haven, Leiston Abbey and Eastbridge where the walk passing through the Sizewell C construction area.  Not significant, short-term and temporary over the remainder of the Sandling's Walk.
<b>Onshore cable route</b>			
<b>Cumulative Landscape Effects</b>			
LCT 07 Estate Sandlands Area A Thorpeness to Aldringham and Friston	Medium-high	High due to the overall changes occurring as a result of the construction of the East Anglia ONE North and East Anglia TWO onshore cable route and Sizewell C on the character of the Estate Sandlands LCT between Thorpeness, Sizewell, Leiston and Aldringham.  Low change to the landscape character to the west of Aldringham, where the cumulative interaction between the onshore cable corridor and Sizewell C becomes limited with their increasing distance apart.	Significant, medium-term and temporary during construction period for East Anglia ONE North and East Anglia TWO onshore cable corridor construction, on the character of the Estate Sandlands LCT between Thorpeness, Sizewell, Leiston and Aldringham.  Not significant, medium-term and temporary change to the landscape character to the west of Aldringham, where the cumulative interaction between the onshore cable corridor and Sizewell C becomes limited with their increasing distance apart.



Receptor	Sensitivity to change	Cumulative magnitude of change with Sizewell C (without mitigation)	Significance of Cumulative Effect with Sizewell C (without mitigation)
LCT 07 Estate Sandlands Area B Sizewell and north of Leiston to Dunwich Forest	Medium	High due to the overall changes occurring as a result of the construction of the East Anglia ONE North and East Anglia TWO onshore cable route and Sizewell C on the character of the Estate Sandlands LCT in the area between Sizewell Power station, Dunwich Forest and Leiston.	Significant, medium-term and temporary during construction period for East Anglia ONE North and East Anglia TWO onshore cable corridor construction, on the character of the Estate Sandlands LCT Sizewell Power station, Dunwich Forest and Leiston.
Suffolk Coast and Heaths AONB (and Heritage Coast) Area A: Sizewell and Dunwich Forest	High	<p>High due to the overall changes occurring as a result of the construction of the East Anglia ONE North and East Anglia TWO onshore cable route and Sizewell C on the character and special qualities of the Suffolk Coast and Heaths AONB between Thorpeness, Sizewell, Leiston and Aldringham.</p> <p>Low change to the landscape character to the west of Aldringham, where the cumulative interaction between the onshore cable corridor and Sizewell C becomes limited with their increasing distance apart as the onshore cable corridor extends outside the AONB.</p>	<p>Significant, medium-term and temporary during construction period for East Anglia ONE North and East Anglia TWO onshore cable corridor construction, on the character and special qualities of the AONB between Thorpeness, Sizewell, Leiston and Aldringham.</p> <p>Not significant, medium-term and temporary change to the landscape character to the west of Aldringham, where the cumulative interaction between the onshore cable corridor and Sizewell C becomes limited with their increasing distance apart as the onshore cable corridor extends outside the AONB.</p>
Suffolk Coast and Heaths AONB (and Heritage Coast) Area C: Sizewell and Dunwich Forest	Medium	High due to the overall changes occurring as a result of the construction of the East Anglia ONE North and East Anglia TWO onshore cable route and Sizewell C on the character and special qualities of the AONB in the area between Sizewell Power station, Dunwich Forest and Leiston.	Significant, short-term medium-term during construction period for East Anglia ONE North and East Anglia TWO onshore cable corridor construction, on the character and special qualities of the AONB Sizewell Power station, Dunwich Forest and Leiston.
<b>Cumulative Visual Effects</b>			



Receptor	Sensitivity to change	Cumulative magnitude of change with Sizewell C (without mitigation)	Significance of Cumulative Effect with Sizewell C (without mitigation)
Leiston (residents)	High	Negligible from the majority of the settlement  Low from localised areas along the eastern edges of Leiston where there is potential for distant visibility of the onshore cable corridor construction to the east and Sizewell C construction to the north.	Not significant, medium-term, temporary
B1122 Aldeburgh Road (motorists)	Medium	Medium, sequential change due to views of the onshore cable corridor construction over a short 300m section of the B1122 to the south of Aldringham and views of the Sizewell C construction area over a 1.5km section of the B1122 between Leiston and Theberton.  Low/negligible over the remainder of the B1122.	Not significant, medium-term and temporary sequential effect due to views of the onshore cable corridor construction over a short 300m section of the B1122 to the south of Aldringham and views of the Sizewell C construction area over a 1.5km section of the B1122 between Leiston and Theberton.
Suffolk Coastal Path (walkers)	Medium-high	High sequential change to views experienced over a short 1.5km section of the route to the north of Thorpeness, where the onshore cable route crosses or is adjacent to the Suffolk Coastal Path and over a 5 km section of the route between Sizewell and Dunwich Heath, where the Suffolk Coastal Path passes in close proximity to the construction of Sizewell C.  Low over the remainder of the Suffolk Coastal Path.	Significant, medium-term and temporary sequential effect to views experienced over a short 1.5km section of the route to the north of Thorpeness, where the onshore cable route crosses or is adjacent to the Suffolk Coastal Path and over a 5 km section of the route between Sizewell and Dunwich Heath, where the Suffolk Coastal Path passes in close proximity to the construction of Sizewell C.  Not significant, short-term and temporary over the remainder of the Suffolk Coastal Path.
Sandlings Walk (walkers)	Medium-high	High sequential change to views experienced due to visibility over three sections of the route: from the edge of Friston to Great Wood for approximately 3.5km where the route runs parallel to and	Significant, medium-term and temporary sequential effect to views experienced over three sections of the route: from the edge of Friston to Great Wood for approximately 3.5km



Receptor	Sensitivity to change	Cumulative magnitude of change with Sizewell C (without mitigation)	Significance of Cumulative Effect with Sizewell C (without mitigation)
		<p>subsequently crosses the onshore cable route; from the edge of Aldringham Common to Sizewell for approximately 2.0km where the route crosses through and then runs parallel to the onshore cable route; and over a 6km section of the route between Sizewell, Minsmere Haven, Leiston Abbey and Eastbridge where the walk passing through the Sizewell C construction area.</p> <p>Low over the remainder of the Sandling's Walk.</p>	<p>where the route runs parallel to and subsequently crosses the onshore cable route; from the edge of Aldringham Common to Sizewell for approximately 2.0km where the route crosses through and then runs parallel to the onshore cable route; and over a 6km section of the route between Sizewell, Minsmere Haven, Leiston Abbey and Eastbridge where the walk passing through the Sizewell C construction area.</p> <p>Not significant, medium-term and temporary over the remainder of the Sandling's Walk.</p>
Suffolk Coastal Cycle Route (cyclists)	Medium-high	<p>High sequential change to views experienced over two sections of the route: a short 1km section of the route, along Grove Road between Friston and Grove Wood, where the onshore cable route crosses or is adjacent to the route of Suffolk Coastal Cycle Route; and from a 2.5km section between Leiston Abbey and Eastbridge where the route passes through the Sizewell C construction area.</p> <p>Low over the remainder of the Suffolk Coastal Cycle Route.</p>	<p>Significant, medium-term and temporary sequential effect to views experienced over two sections of the route: a short 1km section of the route, along Grove Road between Friston and Grove Wood, where the onshore cable route crosses or is adjacent to the route of Suffolk Coastal Cycle Route; and from a 2.5km section between Leiston Abbey and Eastbridge where the route passes through the Sizewell C construction area.</p> <p>Not significant, medium-term and temporary over the remainder of the Suffolk Coastal Cycle Route.</p>



Receptor	Sensitivity to change	Cumulative magnitude of change with Sizewell C (without mitigation)	Significance of Cumulative Effect with Sizewell C (without mitigation)
<b>Onshore Substations and National Grid Substation</b>			
<b>Cumulative Landscape Effects</b>			
LCT 07 Estate Sandlands Area A Thorpeness to Aldringham and Friston	Medium-high	Low due to the long distance between the onshore substation/National Grid substation and Sizewell C, their visual separation by areas of woodland/urban development, and the very different geographic areas of the LCT that may be influenced by each.	Not significant, medium-term and temporary due to the long distance between the onshore substation/National Grid substation and Sizewell C, their visual separation by areas of woodland/urban development, and the very different geographic areas of the LCT that may be influenced by each.
LCT 07 Estate Sandlands Area B Sizewell and north of Leiston to Dunwhich Forest	Medium	Low due to the long distance between the onshore substation/National Grid substation and Sizewell C, their visual separation by areas of woodland/urban development, and the very different geographic areas of the LCT that may be influenced by each.	Not significant, medium-term and temporary due to the long distance between the onshore substation/National Grid substation and Sizewell C, their visual separation by areas of woodland/urban development, and the very different geographic areas of the LCT that may be influenced by each.

### 29.3.3 Potential Cumulative Effects during Operation

22. A technical assessment of those receptors with potential to undergo significant operational cumulative effects with Sizewell C New Nuclear Power Station is presented in full in **Table A29.9** below.



**Table A29.9 Operational Cumulative Effects with Sizewell C**

Receptor	Sensitivity to change	Cumulative magnitude of change with Sizewell C (without mitigation)	Significance of Cumulative Effect with Sizewell C (without mitigation)	Cumulative magnitude of change with Sizewell C (15 years post construction with mitigation)	Significance of Cumulative Effect with Sizewell C (15 years post construction with mitigation)
<b>Onshore Substations and National Grid Substation</b>					
<b>Cumulative Landscape Effects</b>					
LCT 07 Estate Sandlands Area A Thorpeness to Aldringham and Friston	Medium-high	Low due to the long distance between the onshore substation / National Grid substation and Sizewell C, their visual separation by areas of woodland/urban development, and the very different geographic areas of the LCT that may be influenced by each.	Not significant, long-term and temporary due to the long distance between the onshore substation / National Grid substation and Sizewell C, their visual separation by areas of woodland/urban development, and the very different geographic areas of the LCT that may be influenced by each.	Low due to the long distance between the onshore substation / National Grid substation and Sizewell C, their visual separation by areas of woodland/urban development, and the very different geographic areas of the LCT that may be influenced by each.	Not significant, long-term and permanent due to the long distance between the onshore substation / National Grid substation and Sizewell C, their visual separation by areas of woodland/urban development, and the very different geographic areas of the LCT that may be influenced by each.
LCT 07 Estate Sandlands Area B Sizewell and north of Leiston to Dunwich Forest	Medium	Low due to the long distance between the onshore substation / National Grid substation and Sizewell C, their visual separation by areas of woodland/urban development, and the very different geographic areas of the LCT that may be influenced by each.	Not significant, long-term and temporary due to the long distance between the onshore substation / National Grid substation and Sizewell C, their visual separation by areas of woodland/urban development, and the very different geographic areas of the LCT that may be influenced by each.	Low due to the long distance between the onshore substation / National Grid substation and Sizewell C, their visual separation by areas of woodland/urban development, and the very different geographic areas of the LCT that may be influenced by each.	Not significant, long-term and permanent due to the long distance between the onshore substation / National Grid substation and Sizewell C, their visual separation by areas of woodland/urban development, and the very different geographic areas of the LCT that may be influenced by each.